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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,976	03/11/2004	Ho-Chieh Yu	BHT-3230-98	4047

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TROXELL LAW OFFICE PLLC
SUITE 1404
5205 LEESBURG PIKE
FALLS CHURCH, VA 22041

EXAMINER

WARTALOWICZ, PAUL A

ART UNIT	PAPER NUMBER
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1754

MAIL DATE	DELIVERY MODE
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09/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,976	Applicant(s) YU ET AL.	
	Examiner Paul A. Wartalowicz	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Withdrawn Rejections

The 35 USC 112 rejections have been withdrawn.

Response to Arguments

Applicant's arguments filed 6/29/07 have been fully considered but they are not persuasive.

Applicant argues that Tao does not teach a cathode including copper and a metal of manganese.

However, applicant admits that Tao teach teaches a materials for solid state cathode (paragraph 0011, lines 1-3) wherein said materials having general form of $\text{La}_x\text{Mn}_y\text{A}_a\text{B}_b\text{Cu}_c\text{O}_d$ wherein A is an alkaline earth metal, B is selected from the group consisting of scandium, yttrium and a lanthanide metal, C is selected from the group consisting of iron, cobalt, nickel, **copper**, and zinc, x is from 0 to about 1.5, y is from 0 to about 1, a is from 0 to about 0.5, b is from 0 to about 0.5, c is from 0 to about 0.5, and d is between about 1 and about 5 (paragraph 0011). This disclosure appears to teach a cathode material including copper and manganese.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tao (U.S. 2002/0015877) in view of any one of Eylem et al. (U.S. 7160647) or Coetzer et al. (U.S. 4366215).

Tao teaches a materials for solid state cathode (paragraph 0011, lines 1-3) wherein said materials having general form of $\text{La}_x\text{Mn}_y\text{A}_a\text{B}_b\text{Cu}_c\text{O}_d$ wherein A is an alkaline earth metal, B is selected from the group consisting of scandium, yttrium and a lanthanide metal, C is selected from the group consisting of iron, cobalt, nickel, copper, and zinc, x is from 0 to about 1.5, y is from 0 to about 1, a is from 0 to about 0.5, b is from 0 to about 0.5, c is from 0 to about 0.5, and d is between about 1 and about 5 (paragraph 0011) wherein at least one of x, y, a, b, and c is greater than zero (this meets the limitation wherein copper is partly converted to trivalence ion as met by the

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formula CuO_3 , paragraph 0011, lines 16-18) and the materials for cathode in a solid oxide fuels cell is operable at a temperature of 400°C to 2000°C (paragraph 0007, lines 8-10). Tao teaches introducing ions having valence numbers of less than four in a lattice structure (trivalent copper is an ion having a valence number of less than four, paragraph 0037, lines 25-30) in a lattice structure for the purpose of having extra oxygen anion vacancies in the crystal lattice (paragraph 0037, lines 27-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide introducing ions having valence numbers of less than four in a lattice structure (trivalent copper is an ion having a valence number of less than four, paragraph 0037, lines 25-30) in a lattice structure in Tao in order to have extra oxygen anion vacancies in the crystal lattice (paragraph 0037, lines 27-30) as taught by Tao.

Tao et al. fail to teach the anode is doped with alkaline earth metals.

Coetzer et al. teach an electrochemical cell comprising a solid oxide cathode (col. 1) and an anode comprising an alkaline earth anode (col. 4) because the material of the anode is chosen so that it is chemically compatible with the oxide starting material (col. 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide an anode comprising an alkaline earth anode (col. 4) in Tao because the material of the anode is chosen so that it is chemically compatible with the oxide starting material (col. 4) comprising substantially similar elements as taught by Coetzer et al.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571) 272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul Wartalowicz
September 15, 2007



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